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EXAMINER	
EPPERSON, JON D	

ART UNIT	PAPER NUMBER
1639	

MAIL DATE	DELIVERY MODE
10/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/056,874	CORNISH, VIRGINIA W.	
	Examiner	Art Unit	
	Jon D. Epperson	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30,31,35-40,57 and 58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30, 31, 35-40, 57, and 58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/11/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

1. The Response filed July 23, 2007 is acknowledged.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Status of the Claims

3. Claims 1-40, 55 and 56 were pending. Applicants added claims 57-58 and canceled claims 1-29, 32-34, 55, and 56. In addition, claims 30, 35, 37, 38, and 39 were amended. Therefore, claims 30, 31, 35-40, 57 and 58 are currently pending and examined on the merits.

Withdrawn Objections/Rejections

4. The 35 U.S.C. § 112, second paragraph rejections denoted "A-E, G and H" are withdrawn in view of Applicants' amendments and/or cancellation of claims 30, 33. The rejections under 35 U.S.C. § 112, first paragraph are withdrawn in view of Applicants' amendments to claims 30 and 38. The Lin et al. rejection under 35 U.S.C. § 102 is withdrawn in view of Applicants' amendments to claims 30 and 38. All other rejections are maintained and the arguments are addressed below.

Outstanding Objections and/or Rejections

Claim Rejections - 35 U.S.C. 112, second paragraph

5. Claims 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Withdrawn.

B. Withdrawn.

C. Withdrawn.

D. Withdrawn.

E. Withdrawn.

F. **Claim 36** recites the limitation "the molecule" in line 2. There is insufficient antecedent basis for this limitation in the claim. Therefore, claim 36 and all dependent claims are rejected under 35 USC 112, second paragraph.

G. Withdrawn.

H. Withdrawn.

Response

6. Applicant's arguments directed to the above 35 U.S.C. 112, second paragraph rejections were fully considered (and are incorporated in their entirety herein by reference) but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from it original version to more clearly address applicants' newly amended and/or added claims and/or newly amended arguments.

F. **[1]** Applicants argue, "Applicant notes that the recitation of the term "the

molecule" in claim 36 has correct antecedent basis in claim 30, for example, see the preamble of claim 30" (e.g., see 12/7/06 Response, page 9, paragraph 2).

This is not found persuasive for the following reasons:

[1] The Examiner respectfully disagrees. Claim 30 described many molecules including the molecule to be identified mentioned in the preamble, the screening molecule that is covalently bound to a moiety capable of selectively binding to a receptor domain in step (a), the screening molecule that is bound to the first/second protein in step (c), etc. Thus, it is unclear which molecule Applicants is referring to.

Accordingly, the 35 U.S.C. 112, second paragraph rejections cited above are hereby maintained.

Double Patenting

7. Claims 30, 31, 36-40, 57 and 58 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 133, 135-137, 141-147 and 150-160 of U.S. Patent No. 10/705,644 (referred to herein as '644) as evidenced by Fan et al. (Fan et al. "Covalent labeling of dihydrofolate reductase and folate transport proteins by fluorescein methotrexate" Chem. Biol. Pteridines, 1989 Proc. Int. Symp. Pteridines Folid Acid Deriv., 9th (1990), Meeting Date 1989, 1162-5. Editor(s): Curtius et al. Publisher: de Gruyter, Berlin, Fed. Rep. Ger.). An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1986). Although the conflicting claims are not identical, they are not patentably distinct from each other because, for example, claims 30, 31, 36-50, 57 and 58 are generic (or overlap in scope) to all that is recited in claims 133, 135-137, 141-147 and 150-160 of '644. That is, claims 133, 135-137, 141-147 and 150-160 of '644 fall entirely within the scope of claim 30, 31, 36-50, 57 and 58 of the present application or, in other words, claims 30, 31, 36-50, 57 and 58 of the present application are anticipated by claims 133, 135-137, 141-147 and 150-160 of '644.

For ***claims 30 and 38***, the '644 application also claims a method for identifying a molecule that binds a known target in a cell from a pool of candidate molecules (e.g., see '644 application, preamble of claims 133 and 147). In addition, the '644 application also claims method steps for forming a screening molecule by covalently bonding each molecule in the pool of candidate molecules to a substrate capable of selectively forming a covalent bond with a receptor (e.g., see claim 133(a), wherein the substrate is methotrexate moiety of an analog of methotrexate; see also claim 147(a)). Furthermore, the '644 application also claims method steps for introducing the screening molecule into a cell culture comprising cells that express a first fusion protein of a DNA-binding domain fused to a known target receptor domain against which the candidate molecule is screened (e.g., see the '644 application, claims 30(b) and 147(b); see also claims 141 and 152 wherein the DNA binding domain is disclosed as "DHFR-(DNA-binding domain)"). In addition, the '644 application discloses a second fusion protein which comprises a receptor domain capable of binding to and forming a covalent bond with the screening molecule (e.g., see claims 133(b) and 147(b)). The '644 application does not explicit

state that the second fusion protein is "capable" of binding to and forming a covalent bond with the screening molecule but the Examiner contends that this limitation is inherently disclosed by the '645 application as evidenced by Fan et al. (e.g., see Fan et al., page 1162, paragraph 1 wherein methotrexate was shown as being "capable of covalently binding" to DHFR). The '644 application also discloses the use of a reporter gene wherein expression of the reporter gene is conditioned on the proximity of the first fusion protein to the second fusion protein (e.g., see '644 application, claims 133(b) and 147(b)). The '644 application also discloses permitting the screening molecule to bind to the first fusion protein and to the second fusion protein, bringing the two fusion proteins (e.g., see '644 application, claims 133(c) and 147(c)). Finally, the '644 application also discloses (d)-(e) selecting the cell that expresses the reporter gene and identifying the small molecules that binds the known target receptor (e.g., see '644 application, claims 133(d)-(e) and 147(d)-(e)). The '644 application also claims a method wherein the DNA-binding domain of the first fusion protein is LexA (e.g., see '644 application, claims 142 and 152). The '644 application also claims a method wherein the transcription activation domain of the second fusion protein is B42 (e.g., see '644 application, claims 14 and 152).

For ***claim 31***, the '644 application also claims cells selected from the group consisting of insect cells, yeast cells mammalian cells and their lysates (e.g., see '644 application, claims 145 and 156 wherein mammalian and yeast cells are disclosed).

For ***claim 36***, the '644 application also claims a method wherein the molecule is obtained from a combinatorial library (e.g., '644 application, claims 136 and 150).

For ***claim 37***, the '644 application also claims repeating the method steps for competitive binding (e.g., see '644 application, claims 137 and 151).

For ***claim 39***, the '644 application also claims a method wherein the unknown protein target is encoded by a DNA from the group consisting of genomicDNA, cDNA and syntheticDNA (e.g., see '644 application, claim 159).

For ***claim 40***, the '644 application also claims a method wherein the ligand has a known biological function (e.g., see claim 160).

This is a provisional obviousness-type double patenting rejection.

Response

8. Applicant's arguments directed to the above double patenting rejection were fully considered but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from it original version to more clearly address applicants' newly amended and/or added claims and/or arguments.

Applicants argue that that they traverse the rejection and will consider filing a terminal disclaimer if this is the only rejection remaining in the case (e.g., see 12/7/06 Response, page 14).

This is found unpersuasive because no terminal disclaimer has been filed and no reason was given for the traversal.

Accordingly, the double patenting rejection cited above is hereby maintained.

New Rejections

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 30, 31, 35-40, 57 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. For **claims 30 and 38**, the phrase "wherein cellular expression of the reporter gene indicates that the molecule is able to bind to the known target receptor" is vague and indefinite because rather than reciting a method step of doing something, the claims state that something is already done. That is, no method step for "measuring" or "monitoring" the cellular expression of the reporter gene is set forth (e.g., compare to the previous amendment wherein a "selecting" step and an "identifying" step were set forth. Furthermore, to the extent that no "selecting" and "identifying" steps are set forth, it is also submitted that such omissions amount to a gap between the steps because a method for identifying a molecule that binds to a known target receptor could not be performed without it. See MPEP § 2172.01.

B. **Claim 30** recites the limitation "the molecule" in the second line of step (a). There is insufficient antecedent basis for this limitation in the claim. For example, claim 30 refers to several molecules including the molecule that is being identified, the screening molecule, the target receptor molecule, etc. Therefore, claim 30 and all dependent claims are rejected under 35 USC 112, second paragraph.

Claims Rejections - 35 U.S.C. 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 30, 31, 35-40, 57 and 58 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed had possession of the claimed invention. This is a new matter rejection.

A. Claims 30 and 38 were amended in the 12/7/06 response. However, the Examiner cannot find support for "(i) a penicillin-binding-protein ("PBP") or a thymidine synthase ("TS") enzyme receptor domain capable of binding to and forming the covalent bond with the screening molecule." More specifically, the specification only provides support for covalent binding to "part" of the "screening molecule" containing the "moiety capable of selectively binding to and selectively forming a covalent bond with a receptor domain", not "any" portion of the screening molecule like "the molecule" that is to be screened against the target receptor.

B. Claim 30 and 37 were amended to remove the word "small." To the extent that Applicants' claims are no longer limited to these "small" molecules, such increased breadth represents new matter.

11. Claims 30, 31, 35-40, 57 and 58 are rejected under 35 U.S.C. 112, first paragraph, as

based on a disclosure which is not enabling. Active method steps for "screening" cells with activated reporter genes are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). For example, Applicants Field of Invention reads, "This invention relates to high throughput screening of cDNA libraries." However, positive method steps for screening (i.e., formerly steps (d) and (e) in claim 1 and 20) have been removed from the claims. That is, the present claims are drawn to the introduction of a single screening molecule into a cell culture but then fail to provide method steps for detecting and analyzing the molecule after it has been introduced into the cell culture (e.g., see 35 U.S.C. § 112, second paragraph rejection below). Furthermore, Applicants' currently amended claims read on the use of only one single screening molecule, which does not enable the "high throughput" aspect of the invention.

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (571) 272-0808. The examiner can normally be reached Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James (Doug) Schultz can be reached on (571) 272-0763. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jon D. Epperson/
Primary Examiner, AU 1639